REMARKS

Section 112 Rejections

Claims 4, 5 and 12 were rejected for lack of enablement. Claims 4 and 5 have been cancelled. Applicants request reconsideration with respect to Claim 12. The seven optical frequencies are clearly shown in FIGS. 5 and 6. The seven sub-frequency signals are clearly labeled -12, -8, -4, 0, 4, 8, and 12 in FIG. 5. The six communication channels are also shown in FIGS. 5 and 6 and labeled "User Data Slots" in FIG. 5. The figures are additionally described in the specification. Applicant makes the same request with respect to Claim 25.

Section 103 Rejections

All outstanding claims were rejected under Section 103 based on Kang in view of Hoang or based on Kang in view of Hoang and others. Applicants have further limited their independent claims to clearly distinguish the now claimed invention from the cited references. Applicants request reconsideration of his invention in light of the more limited and specific claims.

Applicants have carefully reviewed the cited references.

> Kang describes a complicated scheme for choosing optical paths and backup paths to consume the least amount of wavelength bandwidth.
>
> Hoang describes another extremely complicated scheme for operating an optical network based on a set of connectivity constraints such as quality of service.
>
> Sirat describes a transmitter and modulator arrangement for generating sub-carrier frequencies.
>
> Yamada describes transmitter – modulator system for producing sub-carrier frequencies at 25 GHz spacings.
>
> Tahara also describes a dense wavelength division experiment with 12.5 GHz spacings and 1000 channels.
>
> Examiner's new Mori reference describes a source for emitting precisely spaced optical carriers. Applicants recognize these sources as prior art and discussed them in the second paragraph of the background section of the specification (see Paragraph [0003]).

Most of the technology described in the above references was discussed in the background section of the Application. There is nothing in these references that describe or suggest the unique features of the present invention. The invention is a network with a large number of nodes. These unique features include a network arranged so that information is transmitted without any change in wavelength between nodes on dedicated channels that are entirely optical. All electro-optical conversion and wavelength

multiplexing and de-multiplexing occurs at the nodes or outside the node network. The invention includes a routing algorithm that assures efficient use of optical channels. In all existing large prior art networks information undergoes a large number of color conversions (wavelength changes) and/or electrical-optical conversions within the network before reaching its destination.

The two independent claims have been amended to limit a "routing algorithm adapted to utilize a requirements matrix and an allocation matrix in order to assign wavelength communication channels to avoid collisions". This is an important feature of the present invention discussed in detail in the specification in the section entitled "Solving the Allocation Problem" and the drawings FIGS. 13, 14 and 15.

The present invention provides a very large network permitting communication with no color conversions anywhere on the network and no electrical-optical or optical-electrical conversions between area codes. Neither the cited references nor, to the best of Applicant's knowledge, any other prior are describes or suggests such a network. This invention provides network that can handle enormous data rates for an enormous number of users, substantially errorless.

Conclusion

For all of the above reasons, Applicants request that the claims as modified be allowed and that the application be allowed to issue as a patent.

Respectfully submitted,

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